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[PressPac Archives](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513049&m=2391919&u=ACS&j=12202899&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_PRESSPACS&node_id=223&use_sec=false&sec_url_var=region1&__uuid=a0c923e3-c385-4d96-bdc8-eadaa07eb02f)      | **ACS NEWS SERVICEWeekly Press Package - November 28, 2012 ALL CONTENT IS FOR IMMEDIATE RELEASE  Please credit the individual journal or the American Chemical Society as the source for this information.**Here is the latest American Chemical Society (ACS) Weekly PressPac from the Office of Public Affairs. It has news from ACS’ more than 40 peer-reviewed journals and Chemical & Engineering News.Science Inquiries: Michael Woods, editorm\_woods@acs.org202-872-6293General Inquiries: Michael Bernsteinm\_bernstein@acs.org 202-872-6042  Follow us: http://images.magnetmail.net/images/clients/ACS/Twitter1(1).png  http://images.magnetmail.net/images/clients/ACS/Facebook.jpgARTICLE #1 **FOR IMMEDIATE RELEASE****Hagfish slime as a model for tomorrow’s natural fabrics**Biomacromolecules

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| http://images.magnetmail.net/images/clients/ACS/112812Hagfish_thumb.jpgSlime from hagfish, above, could be a model for tomorrow’s natural fabrics.[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532843&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812hagfish.jpg) for high-resolution image.Credit: Stacia Stower; National Science Foundation funding |

Nylon, Kevlar and other synthetic fabrics: Step aside. If new scientific research pans out, people may be sporting shirts, blouses and other garments made from fibers modeled after those in the icky, super-strong slime from a creature called the hagfish. The study appears in ACS’ journal Biomacromolecules.Lead author Atsuko Negishi, her supervisor Douglas S. Fudge and colleagues explain that petroleum is the raw material for making modern synthetics. Rising prices and the quest for more sustainable alternatives have led scientists to consider the possibilities of using protein-based raw materials, such as spider silk. Another candidate comes from the hagfish, an eel-like fish that produces a thick slime to protect itself against predators. A single Atlantic Hagfish can produce quarts of slime in seconds. It clogs the gills and may suffocate other fish. The slime consists of tens of thousands of remarkably strong threads, each 100 times thinner than a human hair. The scientists set out to investigate spinning spider-silk-like fibers from the proteins of these slime threads. They developed a method for drawing hagfish slime thread proteins into fibers comparable to lab-made spider silk. It involved casting a thin self-supporting film of thread proteins on the surface of a salt solution, then grabbing it with forceps and lifting it upwards so it collapses into a single strand. The threads in hagfish slime, they indicate, might be models for synthetic fibers made from renewable, naturally occurring proteins.The authors acknowledge funding from the [Advanced Foods and Materials Network](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513052&m=2391919&u=ACS&j=12202899&s=http://www.afmcanada.ca/) and the [Ontario Ministry of Economic Development and Innovation](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513053&m=2391919&u=ACS&j=12202899&s=http://www.mri.gov.on.ca/english/programs/era/program.asp).

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| http://images.magnetmail.net/images/clients/ACS/112812BM_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21608933&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812bm.jpg) for high-resolution image. |

ARTICLE #1 **FOR IMMEDIATE RELEASE**“The Production of Fibers and Films from Solubilized Hagfish Slime Thread Proteins”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532845&m=2391919&u=ACS&j=12202899&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/bm3011837) CONTACT:Douglas S. Fudge, Ph.D.University of GuelphGuelph, Ontario CanadaPhone: 519-824-4120, ext. 56418 Fax: 519-767-1656 E-mail: dfudge@uoguelph.ca [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #2 **FOR IMMEDIATE RELEASE****Many home couches contain potentially toxic flame retardants**Environmental Science & Technology

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| http://images.magnetmail.net/images/clients/ACS/112812Couch_thumb.jpgMore manufacturers are using flame retardants in home couches.Credit: iStockphoto/Thinkstock |

Scientists are reporting an increasing use of flame retardants in the main gathering spot for adults, children and family pets in the home — the couch. In a study published in ACS’ journal Environmental Science & Technology, they describe the first efforts to detect and identify the flame retardants applied to the foam inside couches found in millions of family rooms and living rooms across the U.S.Heather Stapleton and colleagues explain that many U.S. manufacturers adhere to California’s flammability standard — termed “Technical Bulletin 117” (TB117) — and use flame retardants in residential furniture. The 1975 standard (now being modified to increase fire safety without flame retardants) focused on saving lives by protecting against home fires started by candles, matches and other small flames. Research, however, indicated that flame retardants can migrate from foam to household dust to people and pets. Other research linked flame retardants with adverse health effects. Stapleton’s team set out to gather information that consumers often lack, including which couches contain flame retardants and what kinds.The researchers analyzed 102 foam samples from residential couches and found that more manufacturers — about 85 percent — are now using flame retardants in their couches compared to the past. For couches purchased in the last seven years, 93 percent contained flame retardants. More than half of the couches contained untested flame retardants or retardants that have raised health concerns, including “Tris,” which is considered a probable human carcinogen based on animal studies and was phased out from use in baby pajamas in 1977.The authors acknowledge funding from a private donation from Fred and Alice Stanback, as well as from the [National Institute of Environmental Health Sciences](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513054&m=2391919&u=ACS&j=12202899&s=http://www.niehs.nih.gov/).

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| http://images.magnetmail.net/images/clients/ACS/112812EST_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21608934&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812est.jpg) for high-resolution image. |

ARTICLE #2 **FOR IMMEDIATE RELEASE**“Novel and High Volume Use Flame Retardants in US Couches Reflective of the 2005 PentaBDE Phase Out”Journalists can obtain a copy of the paper from newsroom@acs.org.CONTACT:Heather M. Stapleton, Ph.D.Nicholas School of the EnvironmentDuke UniversityDurham, N.C. 27708 Phone: 919-613-8717Email: heather.stapleton@duke.edu [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #3 **FOR IMMEDIATE RELEASEScientists sniff out the substances behind the aroma in the “king of fruits”**Journal of Agricultural and Food Chemistry

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| http://images.magnetmail.net/images/clients/ACS/112812Durian_thumb.jpegScientists sniff out the substances behind the aroma of durian fruit.[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532846&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812durian.jpeg) for high-resolution image.Credit: American Chemical Society |

The latest effort to decipher the unique aroma signature of the durian — revered as the “king of fruits” in southeast Asia but reviled elsewhere as the world’s foulest smelling food — has uncovered several new substances that contribute to the fragrance. The research appears in ACS’ Journal of Agricultural and Food Chemistry.Martin Steinhaus and colleagues explain that durian, available in Asian food shops in the United States and elsewhere, has a creamy yellowish flesh that can be eaten fresh or used in cakes, ice cream and other foods. Some people relish the durian’s smell. Others, however, regard it as nauseating, like rotten onions. Past research identified almost 200 volatile substances in durian. Lacking, however, was information on which of those make a contribution to the characteristic durian smell. The authors set out to identify the big chemical players in the durian’s odor signature.In doing so, they pinpointed 41 highly odor-active compounds, 24 of which scientists had not identified in durian before. Among the most prominent were substances associated with fruity, sweet, sulfurous and oniony smells. The oniony smelling odorants belonged to a compound class that had rarely been found in food before. Four of the newly discovered chemical compounds were previously unknown to science.

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| http://images.magnetmail.net/images/clients/ACS/112812JAF_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21608935&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812jaf.jpg) for high-resolution image. |

ARTICLE #3 **FOR IMMEDIATE RELEASE**“Characterization of the Major Odor-Active Compounds in Thai Durian (Durio zibethinus L. 'Monthong') by Aroma Extract Dilution Analysis and Headspace Gas Chromatography-Olfactometry”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532848&m=2391919&u=ACS&j=12202899&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/jf303881k)CONTACT:Martin Steinhaus, Ph.D.German Research Center for Food ChemistryLise-Meitner-Str. 3485354 Freising, GermanyPhone: +49-8161-71-2991Fax: +49-8161-71-2970Email: ms@lrz.tum.de  [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif ARTICLE #4 **FOR IMMEDIATE RELEASE: A PressPac Instant Replay\*****New advance could help soldiers, athletes, others rebound from traumatic brain injuries**ACS Nano

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| http://images.magnetmail.net/images/clients/ACS/101712IED_thumb.jpgAdvance could help victims of traumatic brain injuries such as soldiers injured in explosions, as well as athletes and accident victims.[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532849&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/101712ied.jpg) for high-resolution image.Credit: U.S. Army |

A potential new treatment for traumatic brain injury (TBI), which affects thousands of soldiers, auto accident victims, athletes and others each year, has shown promise in laboratory research, scientists are reporting. TBI can occur in individuals who experience a violent blow to the head that makes the brain collide with the inside of the skull, a gunshot injury or exposure to a nearby explosion. The report on TBI, which currently cannot be treated and may result in permanent brain damage or death, appears in the journal ACS Nano.Thomas Kent, James Tour and colleagues explain that TBI disrupts the supply of oxygen-rich blood to the brain. With the brain so oxygen-needy — accounting for only 2 percent of a person’s weight, but claiming 20 percent of the body’s oxygen supply — even a mild injury, such as a concussion, can have serious consequences. Reduced blood flow and resuscitation result in a build-up of free-radicals, which can kill brain cells. Despite years of far-ranging efforts, no effective treatment has emerged for TBI. That’s why the scientists tried a new approach, based on nanoparticles so small that 1000 would fit across the width of a human hair. They describe development and successful laboratory tests of nanoparticles, called PEG-HCCs. In laboratory rats, the nanoparticles acted like antioxidants, rapidly restoring blood flow to the brain following resuscitation after TBI. “This finding is of major importance for improving patient health under clinically relevant conditions during resuscitative care, and it has direct implications for the current [TBI] war-fighter victims in the Afghanistan and Middle East theaters,” they say.The authors acknowledge funding from the [Department of Defense](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532851&m=2391919&u=ACS&j=12202899&s=http://www.defense.gov/), the [National Science Foundation](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532853&m=2391919&u=ACS&j=12202899&s=http://www.nsf.gov/) and the [National Institutes of Health](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532855&m=2391919&u=ACS&j=12202899&s=http://www.nih.gov/).

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| http://images.magnetmail.net/images/clients/ACS/112812Nano_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21608936&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812nano.jpg) for high-resolution image. |

ARTICLE #4 **FOR IMMEDIATE RELEASE**“Antioxidant Carbon Particles Improve Cerebrovascular Dysfunction Following Traumatic Brain Injury”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=21532857&m=2391919&u=ACS&j=12202899&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/nn302615f)CONTACT:Thomas A. Kent, M.D.Baylor College of MedicineMichael E. DeBakey VA Medical CenterHouston, Texas 77030Email: tkent@bcm.eduorJames M. Tour, Ph.D.Rice UniversityHouston, Texas 77005Email: tour@rice.edu**\* A previous PressPac item that you may have missed**   [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #5 **FOR IMMEDIATE RELEASE****U.N. meeting this week to extend greenhouse gas treaty**Chemical & Engineering News

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| http://images.magnetmail.net/images/clients/ACS/112812CEN_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21608937&m=2391919&u=ACS&j=12202899&s=http://web.1.c2.audiovideoweb.com/1c2web3536/112812cen.jpg) for high-resolution image. |

Amid concern about the possible role of climate change in the development of Hurricane Sandy and other severe weather, negotiators from around the world will gather at a United Nations meeting this week and next to extend an expiring agreement aimed at reducing greenhouse gases. That effort is the subject of a story in the current edition of Chemical & Engineering News (C&EN), the weekly newsmagazine of the American Chemical Society, the world’s largest scientific society.Cheryl Hogue, C&EN senior correspondent, explains that the 1997 Kyoto Protocol required some industrialized nations to reduce their collective emissions of greenhouse gases by 5 percent from 1997 levels. The U.S. is not among them, having rejected the treaty. The reductions were to take place during the five-year period from 2008 to 2012. Now, negotiators are meeting in Qatar’s capital, Doha, to work on an amendment that would create a second round of commitments.The so-called “Doha amendment” would impose new emissions cuts for certain industrialized nations beginning in 2013. Because some countries bound by the Kyoto deal, like EU member states, are already planning similar reductions, the amendment won’t necessarily change anticipated releases of global greenhouse gases. Instead, experts hope it will extend international political momentum to act on climate change after the Kyoto agreement expires this year. Another promise of Doha is a narrower global climate agenda that emphasizes reaching the 2015 agreement over other issues, the story says.ARTICLE #5 **FOR IMMEDIATE RELEASE**"Climate Check"This story is available at:[http://cenm.ag/climate](http://www.mmsend88.com/link.cfm?r=800557068&sid=21608938&m=2391919&u=ACS&j=12202899&s=http://cenm.ag/climate)  [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif **Journalists’ Resources****About the Weekly PressPac**The ACS Weekly PressPac consists of summaries of research published in the American Chemical Society’s more than 40 peer-reviewed journals and its weekly newsmagazine, Chemical & Engineering News. ACS journals publish more than 35,000 articles annually. Although not traditional press releases, PressPac content can be used to prepare news stories, in conjunction with the full-text PDF and an interview with the authors. PressPac stories and the accompanying full-text PDFs also can be an excellent resource for features and background.**Press releases, briefings and more from ACS’ 244th National Meeting**[www.eurekalert.org/acsmeet.php](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513056&m=2391919&u=ACS&j=12202899&s=http://www.eurekalert.org/acsmeet.php) [http://www.ustream.tv/channel/acslive](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513057&m=2391919&u=ACS&j=12202899&s=http://www.ustream.tv/channel/acslive%20) **Inside Science News Service**For thoroughly enjoyable multimedia coverage of the science behind the news — a valuable resource for journalists and news media organizations everywhere. [Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513058&m=2391919&u=ACS&j=12202899&s=http://www.insidescience.org/) to visit the Inside Science News website.**C&EN Video Spotlight: A Family Affair**Take a peek inside the family-oriented conference held annually by the National Organization for the Professional Advancement of Black Chemists & Chemical Engineers (NOBCChE). C&EN Associate Editor Lauren Wolf chronicles NOBCChE attendees, from leaders to students, as they make lifelong connections by presenting research; attending a career fair and workshops, some of which are sponsored by ACS; and more.[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513059&m=2391919&u=ACS&j=12202899&s=http://cenm.ag/nobcche39) to read the article and view the video.**Must-Read from C&EN: How Many Chemists Can Share a 450 Square-Foot Lab?**Hundreds of scientists can search for tomorrow’s medicines in the Automated Synthesis Laboratory at Eli Lilly & Co., a showcase for the automation that is now making inroads in industrial and academic labs. For the full story, contact newsroom@acs.org. **ACS Pressroom Blog** The ACS Office of Public Affairs' [pressroom blog](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513060&m=2391919&u=ACS&j=12202899&s=https://communities.acs.org/community/science/science_news) highlights research from ACS’ more than 40 peer-reviewed journals and National Meetings. **Bytesize Science Blog** Educators and kids, put on your thinking caps: The American Chemical Society has [a blog for Bytesize Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513061&m=2391919&u=ACS&j=12202899&s=http://www.bytesizescience.com), a science podcast for kids of all ages.  **ACS Satellite Pressroom: Daily news blasts on Twitter** The satellite press room has become one of the most popular science news sites on Twitter. To get our news blasts and updates, create a free account at [https://twitter.com/signup](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513062&m=2391919&u=ACS&j=12202899&s=https://twitter.com/signup). Then visit [http://twitter.com/ACSpressroom](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513063&m=2391919&u=ACS&j=12202899&s=http://twitter.com/ACSpressroom) and click the ‘join’ button beneath the press room logo. **C&EN on Twitter**Follow @cenmag <[http://twitter.com/cenmag](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513064&m=2391919&u=ACS&j=12202899&s=http://twitter.com/cenmag)> for the latest news in chemistry and dispatches from C&EN's blog, CENtral Science <[http://centralscience.org](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513065&m=2391919&u=ACS&j=12202899&s=http://centralscience.org)>.**ACS Press Releases** [Press releases](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513066&m=2391919&u=ACS&j=12202899&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_NEWSRELEASES&node_id=222&use_sec=false&sec_url_var=region1&__uuid=50b5ab93-801d-4d0d-868f-b9507ff9d709) on a variety of chemistry-related topics.[To Top](#top)http://images.magnetmail.net/images/clients/acs/goldline.gif**ACS Videos**The American Chemical Society encourages news organizations, museums, educational organizations and other web sites to embed links to these videos.**Spellbound: How Kids Became Scientists**

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The road to a Nobel Prize began for one scientist in elementary school when his father placed a sign on his bedroom door proclaiming him to be a “doctor.” This is just one of the many experiences that helped launch the careers of scientists from diverse backgrounds who are featured in a new ACS video series called [Spellbound: How Kids Became Scientists](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513067&m=2391919&u=ACS&j=12202899&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=1355&content_id=CNBP_028033&use_sec=true&sec_url_var=region1&__uuid=e8e6ee76-0abe-4e78-84c4-3717c995c65e). **Prized Science video series**

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Prized Science: How the Science Behind ACS Awards Impacts Your Life video series is new for 2012! The first episode features the research of Dr. Robert Langer, winner of the 2012 ACS Priestley Medal. He is a professor at the Massachusetts Institute of Technology. The Priestley Medal is the highest honor of the ACS, and it recognizes Langer’s pioneering work making body tissues in the lab by growing cells on special pieces of plastic. Langer’s team has used the approach to make skin for burn patients, for instance, with the goal of eventually making whole organs for transplantation. The second episode features Dr. Chad Mirkin, winner of the 2012 ACS Award for Creative Invention. His research has provided patients with faster diagnoses for influenza and other respiratory infections, and new tests that improve care for heart disease. More episodes will appear later in the year. The series is available at the [Prized Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513068&m=2391919&u=ACS&j=12202899&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=446&content_id=CTD1_018821&use_sec=true&sec_url_var=region1&__uuid=594bce97-0b05-4df7-b759-1a0f9156c5d8) website and on DVD. **The Periodic Table Table Featuring Theo Gray**

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Some people collect stamps. Wolfram Research co-founder and author Theo Gray collects elements. Step into his office, and you'll see a silicon disc engraved with Homer Simpson, a jar of mercury, uranium shells and hundreds of other chemical artifacts. But his real DIY masterpiece is the world's first ["periodic table table."](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513069&m=2391919&u=ACS&j=12202899&s=http://www.bytesizescience.com/index.cfm/2012/2/22/The-Periodic-Table-Table-Featuring-Theo-Gray) Within this masterfully constructed table-top lay samples of nearly every element known to man, minus the super-radioactive ones.**Healing the voice: Synthetic vocal cords**

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[Synthetic vocal cords](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513070&m=2391919&u=ACS&j=12202899&s=http://www.bytesizescience.com/index.cfm/2012/5/22/Bytesize-Science-Healing-the-voice-with-synthetic-vocal-cords%20) may someday heal the voices of singers like Julie Andrews -- whose legendary voice was permanently damaged in a 1997 operation. Filmed in the lab of 2012 ACS Priestley Medalist and MIT Institute Professor Robert Langer, our latest video explains how artificial polymer vocal cords may help repair damaged vocal tissue.[The Chemistry of Beer](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513071&m=2391919&u=ACS&j=12202899&s=http://youtu.be/2xKpQ11CpVE)[The Chemistry of Cheese](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513072&m=2391919&u=ACS&j=12202899&s=http://youtu.be/jMAlToEYHJM)[Without a scratch: Self-Healing Materials](http://www.mmsend88.com/link.cfm?r=800557068&sid=21513073&m=2391919&u=ACS&j=12202899&s=http://youtu.be/Bx3WTSSD5f0) [To Top](#top)  http://images.magnetmail.net/images/clients/ACS/goldline.gif**ACS Podcasts**

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